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Remarks

With this amendment, Applicant has amended claims 1-19, 21-24 and 26-30. Accordingly, Applicant respectfully requests allowance of the now pending claims 1-30.

Allowable Subject Matter

The Official Action mailed October 31, 2003 (hereinafter referred to as "Official Action") indicated that claims 9 and 30 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants have elected to forgo such rewriting of claims 9 and 30 at this time since Applicants believe that claims 9 and 30 depend from allowable base claims. The patentability of such base claims is discussed in detail below.

Claim Objections

The Official Action objected to claims 1-3 for containing parenthetical terms. Further, the Official Action stated that claims cannot contain parentheses except in reference to a figure and cited MPEP 608.01(m) for support. Applicants respectfully point out that MPEP 608.01(m) merely states that if a claim contains reference characters that the reference characters should be enclosed in parentheses. But, Applicants were unable to locate in MPEP 608.01(m) any indication that claims may not contain parentheses for purposes other than enclosing claim references. Further, Applicants are unaware of such a prohibition against parentheses in the claims.

With that said, Applicants have amended the claims to remove any parenthesis from the claims 1-16, 18-19, 21, 23-24 and 26-30 and to expand abbreviated forms of some terms in the claims. However, Applicants have elected to make such

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amendments merely for stylistic reasons and not for reasons of patentability. Applicants believe the claims as originally filed were in proper form for allowance and the amended claims have the same or broader scope than the claims as originally filed. Accordingly, it is not the intention of the Applicants to surrender any rights to equivalents under the doctrine of equivalents as a result of the present amendments to claims 1-16, 18-19, 21, 23-24 and 26-30.

Claim Rejections under 35 USC 102 (Gulick)

The Official Action rejected claims 1-3, 5-6, 10-13 and 27 under 35 USC 102(e) as being anticipated by Gulick (US Patent 6,421,702). As indicated above, Applicants have amended claims 1-3, 5-6, 10-13 and 27 for stylistic reasons and not for reasons of patentability. Further, Applicants believe claims 1-3, 5-6, 10-13 and 27 as amended have the same or broader scope than the originally filed claims. Applicants respectfully request allowance of claims 1-3, 5-6, 10-13 and 27.

As is well-established, in order to successfully assert a *prima facie* case of anticipation, the Official Action must provide a single prior art document that includes every element and limitation of the claim or claims being rejected. Therefore, if even one element or limitation is missing from the cited document, the Official Action has not succeeded in making a *prima facie* case.

Each of claims 1-3, 5-6, 10-13 and 27 deal with the scheduling of a plurality of virtual machines. However, after a thorough review of the Official Action and Gulick and a computer-aided textual search of Gulick, Applicants have been unable to locate a single reference to a virtual machine in Gulick. Gulick simply appears to provide no teaching with respect to virtual machines let alone to scheduling of virtual machines as required by the invention of claims 1-3, 5-6, 10-13 and 27. Applicants respectfully

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request that if the Examiner elects to maintain this rejection that the Examiner point out with more specificity where Gulick mentions virtual machines and more particularly the scheduling of a plurality of virtual machines.

Additional points could be made in support of the allowance of claims 1-3, 5-6, 10-13 and 27. However, Applicants believe the above is sufficient to overcome the present rejection of claims 1-3, 5-6, 10-13 and 27 under Gulick. Accordingly, such arguments will not be presented at this time so as to not burden the Examiner with the review of superfluous points. Allowance of claim 1-3, 5-6, 10-13 and 27 is respectfully requested.

Claim Rejections under 35 USC 103 (Gulick/Maytal)

The Official Action rejected claims 4, 7-8, 14-16 and 28-29 as being unpatentable over Gulick in view of Maytal (US Patent 6,092,095). It is well established that obviousness requires a teaching or a suggestion by the relied upon prior art of all the elements of a claim (MPEP. §2142). Without conceding the appropriateness of the combination, Applicants respectfully submit that the combination of Gulick and Maytal does not meet the requirements of an obvious rejection in that neither teaches nor suggests scheduling of a plurality of virtual machines.

As stated above, Gulick appears to provide no teaching in regard to virtual machines. Similarly, Maytal appears to provide no teaching in regard to virtual machines. Since each of claims 4, 7-8, 14-16 and 28-29 depend from claims that require scheduling of a plurality of virtual machines, each of claims 4, 7-8, 14-16 and 28-29 are allowable for the reasons discussed above.

Additional points could be made in support of the allowance of claims 4, 7-8, 14-16 and 28-29. However, Applicants believe the above is sufficient to overcome the

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present rejection of claims 4, 7-8, 14-16 and 28-29. Accordingly, such arguments will not be presented at this time so as to not burden the Examiner with the review of superfluous points. Allowance of claim 4, 7-8, 14-16 and 28-29 is respectfully requested.

Claim Rejections under 35 USC 103 (Weber)

The Official Action rejected claims 17-26 under 35 USC 103(a) as being unpatentable over Webber (US Patent 6,412,035). In regard to amended claims 17 and 22, Weber does not disclose filtering known non-periodic interrupts, rejecting detected aperiodic interrupts, or adjusting interrupt period values iteratively until substantially equivalent to actual interrupt periods. As disclosed in the Applicants' application (See, e.g., page 7), some embodiments may include an interrupt period detector to determine periods for periodic interrupts. Some embodiments may further comprise an interrupt virtualizer that filters known non-periodic interrupts such as, for example, interrupts associated with a keyboard from the interrupt period detector. Furthermore, the interrupt period detector may reject detected aperiodic interrupts not filtered by the interrupt virtualizer. The interrupt period detector may then provide a scheduler with the determined periods for the periodic interrupts so that the scheduler may schedule servicing of the periodic interrupts accordingly.

Weber on the other hand describes a fast interrupt handling module that provides facilities for faster servicing of certain real-time interrupts. In particular, Weber provides various functions for changing the interrupt frequency. However, Applicants' were unable to locate where Weber discloses adjusting said interrupt period values iteratively until substantially equivalent to actual interrupt periods. Further, Applicants' were unable to locate where Weber discloses filtering known non-periodic interrupts. In

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regard to filtering, it appears that Weber merely provides a Hook_Device_Services() function that has several member functions that filter corresponding functions of the VTD.386 module. These functions of the Hook_Device_Services() appear to override or filter software calls to similar functions of the VTD.386 module but as far as the Applicants can discern do not filter known non-period interrupts.

Applicants respectfully request that if the Examiner elects to maintain this rejection that the Examiner point out with more specificity where Weber provides a teaching, suggestion, or motivation to (i) filter detected non-periodic interrupts, (ii) reject predetermined aperiodic interrupts, and (iii) adjust interrupt period values iteratively until substantially equivalent to actual interrupt periods. Allowance of claims 17 and 22 is respectfully requested.

In regard to claims 18 and 23, Weber does not appear to disclose scheduling a plurality of virtual machines to achieve real-time deadlines based, at least in part, on interrupt period values and resource requirement values. While Weber appears to disclose a same virtualization techniques and a fast interrupt handling module for real-time interrupts, Weber appears to be silent as to scheduling of a plurality of virtual machines let alone scheduling a plurality of virtual machines based, at least in part, on interrupt period values and resource requirement values. Again, Applicants respectfully request that if the Examiner elects to maintain this rejection that the Examiner point out with more specificity where Weber provides a teaching, suggestion, or motivation to (i) schedule a plurality of virtual machines, (ii) to schedule based, at least in part, on interrupt period values and resource requirement values. Allowance of claims 18 and 23 is respectfully requested.

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Each of claims 19-21 depends from claim 17 or 18. Accordingly, each of claims 19-21 is allowable for at least one of the reasons stated above in regard to claims 17 and 18. Similarly, each of claims 24-26 depends from claim 22 or 23. Accordingly, each of claims 24-26 is allowable for at least one of the reasons stated above in regard to claims 22 and 23. Additional points could be made in support of the allowance of claims 19-21 and 24-26. However, Applicants believe the above is sufficient to overcome the present rejection of claims 19-21 and 24-26. Accordingly, such arguments will not be presented at this time so as to not burden the Examiner with the review of superfluous points. Allowance of claim 19-21 and 24-26 is respectfully requested.

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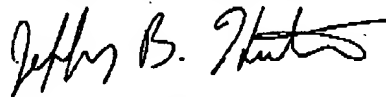
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Conclusion

The foregoing is submitted as a full and complete response to the Official Action mailed October 31, 2003. Applicants submit that the pending claims are in condition for allowance. Reconsideration is requested, and allowance of the now pending claims is earnestly solicited.

Should it be determined that an additional fee is due under 37 CFR §§1.16 or 1.17, or any excess fee has been received, please charge that fee or credit the amount of overcharge to deposit account #50-0221. If the Examiner believes that there are any informalities which can be corrected by an Examiner's amendment, a telephone call to the undersigned at (480) 554-4198 is respectfully solicited.

Respectfully submitted,



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